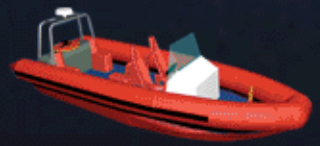
DEEPWATER



Battlespace Environment - Program Perspective

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Agenda

- Integrated Deepwater Acquisition Program
- Asset Modification – An Example
- IDS Battlespace Environment Defined
- IDS Battlespace Environment – C4ISR Domain
- IDS Strategic Goals
- Use of Modeling and Simulation
- Legacy, Emerging and New Technologies
- NET- 3 Fidelity and Complexity
- Who Validates IDS Battlespace Environment ?
- Current Developments and Lessons Learned
- Infrastructure Requirements/Enhancements
- Recommendations
- Conclusion

Integrated Deepwater System (IDS) Acquisition Program

- ***System of Systems*** **Procurement – Goal: Optimize Operational Effectiveness (OE) and Total Ownership Cost (TOC)**
- **Awarded in July '02 to *Integrated Coast Guard Systems* (Joint Venture – Lockheed Martin and Northrop Grumman)**
- **Four *Domains***
  - *** Surface * Air**
  - *** C4ISR * Logistics**
- **Multiple *Assets* (e.g. Cutters, Aircraft, Small Boats, Shore Facilities) deployed over 25 years**
- **Focus on COTS/CANDI**

Asset Modification: 110'WPB Conversion to 123'WPB

IDS Battlespace Environment Defined

- Any body of water (littoral, harbor, open sea) and contiguous airspace where USCG missions are performed

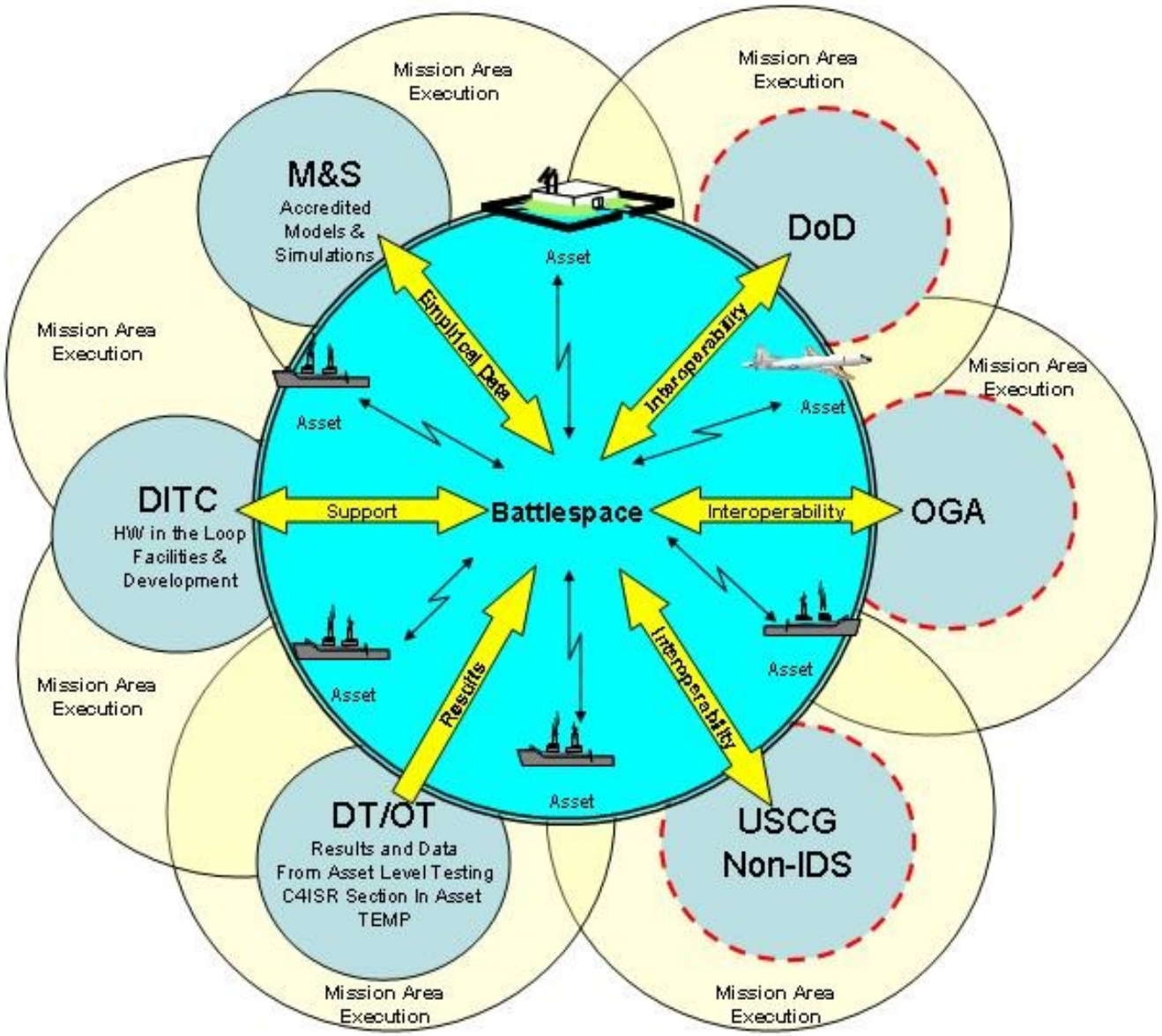
(C4ISR Domain- the KEY to IDS Performance)

IDS Strategic Goals

- "Goals" bound performance within IDS Battlespace (OE and TOC)
- "Goals" measured against Mission Performance
- USCG - *Semper Paratus*

- **IDS Missions:**
  - Alien Migrant Interdiction Operations
  - Port Operations/Security and Defense
  - Drug Interdiction
  - Marine Environment Response Operations
  - Foreign Vessel Inspection
  - General Defense Operations
  - General Law Enforcement
  - International Ice Patrol
  - Lightering Zone Enforcement
  - Living Marine Resources Enforcement
  - Maritime Intercept Operations
  - Marine Pollution Enforcement and Response
  - Search and Rescue
  - Peacetime Military Engagement
  - Maritime Homeland Security
  - Coastal Sea Control Operations

Battlespace Environment – C4ISR Domain



Use of Modeling and Simulation

- **Employed at all program levels – System of System (Battlespace level) , Domain and Asset**
- **Supports both performance measurement and acquisition processes**
- **Campaign Models – Federation includes JSAS and MAROPSIM (aimed at measuring SOS Operational Effectiveness)**
- **Mission/Force Models – Federation includes MICROSAINT and MEDUSA 21 (Domain and Asset Level including engagement functions)**

Note: Validation, Verification and Accreditation a contract requirement

Legacy, Emerging and New Technologies

- **COTS/CANDI focus fosters:**
  - **Fielding proven technology (left side of curve)**
  - **Cost control (acquisition and TOC)**
  - **Innovation (e.g. 802.11 Wi-Fi small boat connectivity for Boarding Parties)**
  - **Spiral Development (Build A Little – Test A Little)**
  - **Planning for Technology Refreshment**
  - **Flexibility to respond to Battlespace changes**
  - **Test (existing engineering and test data)**
  - **Training (existing operations and maintenance manuals)**

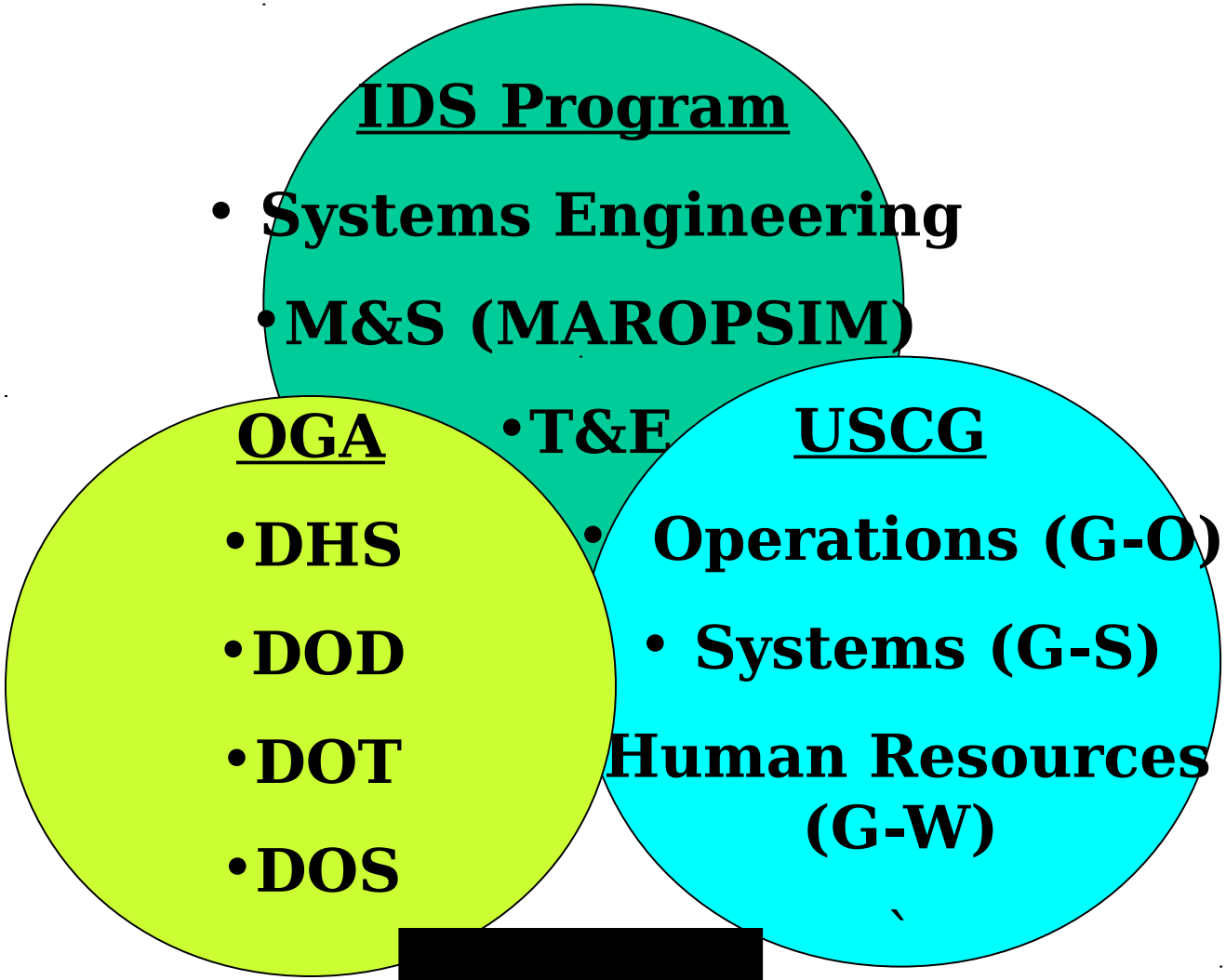
Challenges: obsolescence, stove piping, trade-offs

Exceptions: VUAV, Data Fusion

NET- 3 Fidelity and Complexity

- **Test**
  - Rapid pace of Asset testing a challenge – focus on TECHEVAL (complex C4ISR suites)
  - Need for Common Testing Architecture
  - Data feed for SOS M&S indicated (more/better data = greater fidelity)
- **Training**
  - Challenge of translating COTS manuals into USCG training format
  - Timing of training critical (validation an issue)
  - Keeping training Battlespace/mission focused
  - Conducting training so as not to interfere with operations
- **Technology**
  - Technology Refreshment Plan a contract CDRL
  - Complex C4ISR integration issues
  - Test planning and implementation challenges

Who Validates IDS Battlespace Environment ?



Current Developments and Lessons Learned

- **Maintain C4ISR Architecture (Open System) as Battlespace evolves**
  - **Mission Modification/Addition - a fact of life as Battlespace evolution continues (911/DHS/Iraq)**
  - **PERS TEMPO stresses all levels of operations**
- **Force structure must be Capability Based**
- **Slight lag to technology curve not all bad!**
- **JOINT and INTEROPERABLE have multiple meanings**

Infrastructure Requirements/Enhancements

- Battlespace must include missions beyond normal DOD perspective (e.g law enforcement, environmental, rescue)
- UAVS will vastly extend search/surveillance capabilities
- SATCOM/TADIL enhancements will improve COMMON OPERATIONAL PICTURE
- Sensor/Intel fusion will focus classification/identification efforts
- Additional M&S efforts will improve both Battlespace performance measures and model fidelity

Recommendations

- Widen definition of Battlespace to included USCG missions as indicated to maximize Joint effectiveness
- Increase sharing of UAV surveillance assets
- Better filter intel/threat inputs
- Employ more campaign level modeling (MAROPSIM) to derive asset mix/numbers
- Focus Battlespace efforts on Capabilities vs. Threats

Conclusion

- **M&S is a multi-dimensional tool which supports:**
  - **Battlespace Operations**
  - **Acquisition Decisions**
  - **Mission Effectiveness Measures**
- **Proven Technology may be preferable to Leading Edge Technology where Test and Training Dollars are both precious and scarce**
- **Common Testing Architecture required**
- **Battlespace will change quicker than we think in ways we don't expect – our Focus must be to field Effective Capabilities/Assets to operate within it. Good M&S programs can greatly aid our decision processes.**

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